SKORODUMOVA, Aleksandra Mikhailevna.

[Dietetic and medicinal sour milk products and their production]
Dieticheskie i lechebnye kislomolechnye produkty i organizatsiia
ikh proizvodstva. Leningrad, Medgiz, 1955. 135 p.   (MIRA 9:6)
(MILK, ACIDOPHILUS)

SKORODUMOVA, A.M.

Antibiotic properties of the fermented milk beverages.
A. M. Skorodumova. *Voprosy Pitaniya* 15, No. 2, 32-6
(1950).—Data are given which indicate that the fermented
cow-milk product, kumyss, contains certain antibiotics which
inhibit the growth of the following bacteria: *Serratia mar-
cescens, Aerobacter aerogenes, Bacillus subtilis, B. mycoides,
Escherichia coli, Micrococcus candicans,* and also *Mycobacter-
ium album* and *M. perrugosum.* The antibiotic substances
are produced during milk fermentation by the growing lac-
tic acid bacteria, and particularly by the yeast cells. This is
a symbiotic effect since neither lactic acid bacteria nor yeasts,
if grown alone, can produce much of the antibiotic sub-
stances. When grown together in the fermenting milk the
highest titer of the antibiotics was found on the 3rd day
of the fermentation. By proper selecting of the cultures
of the bacteria and the yeasts the titer in the acidophilous
yeast milk as high as 1:40–1:80 was obtained. Children
suffering from tuberculosis were in a better health condition
after drinking for 2 months 2 glasses of the fermented milk/
day than the children receiving the same amt. of fresh milk.
Similar clinical results have been obtained on adult tuber-
culous patients.   E. Wierbicki

Country	:USSR
Category	:Microbiology. Antibiosis and Symbiosis. Antibiotics.
Abs. Jour	:Ref Zhur-Biol., No 23, 1958, No 103756
Author	:Skorodumova, A. M.
Institut.	:—
Title	:Antibiotics and Their Significance in the Milk Industry
Orig. Pub.	: Dokl. Vses. konferentsii po molochn. delu. Moscow, Sel'khozgiz, 1958, 370-375
Abstract	:No abstract.

Card: 1/1

F-35

SKORODUMOVA, Aleksandra Mikhaylovna; ZAKRZHEVSKIY, Ye.B., red.; KHARASH,
    G.A., tekhn. red.

[Dietitic and therapeutic fermented milk products; microbiological
principles] Dieticheskie i lechebnye kislomolochnye produkty; mikro-
biologicheskie osnovy. Izd.2., ispr. i dop. Leningrad, Gos. izd-vo
med. lit-ry Medgiz, 1961. 203 p.   (MIRA 14:8)
    (MILK, FERMENTED)   (DAIRY PRODUCTS—MICROBIOLOGY)

SKORODUMOVA, A.M. (Leningradskaya oblast')

Dietetic and medicinal sour milk products. Med. sestra 21 no.4:22-28
Ap '62.   (MIRA 15:4)
                        (MILK, FERMENTED)

INIKHOV, G.S., zasl. deyatel' nauki i tekhniki, doktor khim. nauk,
   prof.; SKORODUMOVA, A.M., kand. biol. nauk; SHAPIRO, L.R.
   [deceased]; MILYUTINA, L.A., inzh.; DEMUROV, M.G., kand.
   sel'khoz. nauk; LEBEDEVA, K.S., kand. sel'khoz.nauk; KYURKCHAN, V.N.;
   VASILEVSKIY, V.G., inzh.; SAVINOVSKIY, N.G., kand. tekhn. nauk;
   VEDRASHKO, V.F., kand.med. nauk; SOKOLOVSKIY, V.P., prof.;
   BEGUNOV, V.L., inzh.; KAZENNOVA, A.R.; VEDRASHKO, V.F., kand.
   med. nauk; KOSTYGOV, V.V., red.; SKURIKHIN, M.A., MOLCHANOVA,
   O.P., doktor biol. nauk, prof.; SPERANSKIY, G.N., zasl. de-
   yatel' nauk , doktor med. nauk, prof., KISINA, Ye.I., tekhn.
   red.

[Dairy foods]Molochnaia pishcha. Moskva, Pishchepromizdat,
1962. 419 p.   (MIRA 15:10)

1. Glavnyy kulinar Ministerstva torgovli RSFSR (for Kazennova).
2. Chlen-korrespondent Akademii meditsinskikh nauk SSSR (for Speranskiy,
Skurikhin). 3. Deystvitel'nyy chlen Akademii meditsinskikh nauk
SSSR (for Molchanova).
       (Cookery (Dairy products)) (Dairy products)

ARISTOVSKAYA, T.V.; VLADIMIRSKAYA, M.Ye.; GOLLERBAKH, M.M.; KATANSKAYA,
F.A.; KASHKIN, P.N.; KLUPT, S.Ye.; LOZINA-LOZINSKIY, L.K.; NORKINA,
S.P.; RUMYANTSEVA, V.M.; SELIBER, G.L., prof.[deceased]; SKALON,
I.S.; SKORODUMOVA, A.M.; KHETAGUROVA, F.V.; CHASTUKHIN, V.Ya.;
PARSADANOVA, K.G., red.; GARINA, T.D., tekhn. red.

[Comprehensive laboratory manual on microbiology] Bol'shoi prak-
tikum po mikrobiologii. [By] T.V.Aristovskaia i dr. Pod obshchei
red. G.L.Selibera. Moskva, Vysshaia shkola, 1962. 490 p.
                                           (MIRA 16:3)
        (MICROBIOLOGY—LABORATORY MANUALS)

SKORODUMOVA, Aleksandra Mikhaylovna; KOROLEVA, N.S., kand. biol.
nauk, retsenzent; KULESHOVA, V.D., retsenzent; NOZDRINA,
V.A., red.; SOKOLOVA,I.A., tekhn. red.

[Practical manual on the technical microbiology of milk and
milk products]Prakticheskoe rukovodstvo po tekhnicheskoi mikro-
biologii moloka i molochnykh produktov. 3. izd., perer. i dop.
Moskva, Pishchepromizdat, 1963.   (MIRA 16:3)

1. Starshiy mikrobiolog Moskovskogo molochnogo zavoda No.1
(for Kuleshova).
                        (MILK--MICROBIOLOGY)

SKORODUMOVA, A.M.

Fat hydrolyzing yeast. Mikrobiologiia 34 no.5:912-917
S-0 '65.   (MIRA 18:10)

E.... M, .. .

........, ..V. "On the .... of chiasmal syndrome at the time of tumors of cellular-chiasmal area," Sbornik nauch. rabot, posvyashch. ...veti eni. ..vorozhd, M....-Leningrad, 1946, s. 172-7.

SO: U-3 'u, 1. April 1.51, (Letopis 'Zhurnal 'nykh Statey, No. 3, 1949)

SKORODUMOVA, A.V.

Problem of the diagnostic significance of pupillary pathology in brain
tumors. Vopr.neirokhir. 18 no.1:58-66 Ja-F '54.   (MLRA 7:4)

1. Iz Instituta neyrokhirurgii im. akademika N.N.Burdenko Akademii
meditsinskikh nauk SSSR.
                         (Brain--Tumors) (Pupil (Eye)

SKORODUMOVA, I.P.; SEMENOV, L.V.

"Soviet Tuva." P.A.Shakhunova, B.N.Likhanov. Reviewed by I.P.
Skorodumov, L.V. Semenov. Geog.v shkole 19 no.5:75 S-O '56.
   (Tuva Autonomous Province) (Shakhunova, P.A.)
                   (Likhanov, B.N.)

SKORODUMOVA, I.P.; SEMENOV, L.V.

"Production costs in enterprises of the Far Eastern Construction Administration and ways to lower them" by L.A. Gol'dshvend. Reviewed by I.P. Skorodumova, L.V. Semenov. Gor.zhur. no.6:77-78 Je '57.

(MLRA 10:8)

(Soviet Far East--Gold mines and mining--Costs)

BAGRIKOV, I.N., inzhener; TISHENKOV, A.M., dotsent; SKORODUMOVA, I.P.

"Economics and organization of power production" by S.A.Pruzner,
G.A.Kalinin, S.F.Shershov. Reviewed by I.N.Bagrikov, A.M.Tishenkov,
I.P.Skorodumova. Elek.sta. 28 no.8:94-96 Ag '57.   (MIRA 10:10)
        (Pruzner, S.A.) (Kalinin, G.A.) (Shershov, S.F.)
                    (Electric power)

CATEGORY : USSR
General Problems of Pathology. Tumors. Compara-
tive Oncology

ABS. JOUR. : RZBiol., No. 12 1958, No. 56494

AUTHOR : Shorodumova, I.V.

TITLE : The Innervation of Tumors of the Salivary Glands

ORIG. PUB. : Stomatologiya, 1957, No.6, 56-51

ABSTRACT : On the basis of histologic studies of 47 tumors
of the salivary glands in man, the author believes
that all tumors both benign and malignant are in-
nervated, but the innervation of tumors differs
from the nerve supply of normal tissues, for in
connection with the growth of the tumor the lat-
ter, as well as the innervation, is in a state of
continuous reconstruction. The nerve formations
in both the tumor itself and the capsule of it
(if a capsule exists) and in the tissues surroun-
ding the tumor are constantly in a state of irri-
tation, especially in cases of malignant tumors.
The presence of afferent nerve fibers testifies

CARD: 1/2

SKORODUMOVA, I.V.

Innervation of a transplanted Brown-Pearce tumor in a rabbit.
Biul. eksp. biol. i med. 49 no. 6:84-88 Je '60. (MIRA 13:8)

1. Iz laboratorii eksperimental'noy patomorfologii (zav. -
chlen-korrespondent AMN SSSR prof. A.A. Solov'yev) Instituta
normal'noy patologicheskoy fiziologii (dir. - deystv. chlen AMN
SSSR V.N. Chernigovskiy), AMN SSSR, Moskva. Predstavlena
deystv. chlenom AMN SSSR N.N. Zhukovym-Verezhnikovym.
      (CANCER)   (TRANSPLANATATION OF ORGANS, TISSUES, ETC.)

SKORODUMOVA, I.V.

Morphological changes in dysenteric intoxication of animals with
different types of the nervous system. Dokl. AN SSSR 137 no.2:476-
479 Mr '61.   (MIRA 14:2)

1. Institut normal'noy i patologicheskoy AMN SSSR. Predstavleno
akademikom V.N.Chernigov.......
           (DYSENTERY)   (NERVOUS SYSTEM)

SKORODUMOVA, I.V.; AMIANTOVA, L.D.

Morphological changes in experimental diphtherial intoxication
in animals with different types of nervous systems. Zhur.
mikrobiol. epid. i immun. 40 no.5:143-147 My '63.

(MIRA 17:6)

1. Iz Instituta normal'noy i patologicheskoy fiziologii AMN
SSSR.

SKORODINSKA, J.V.

Current data on the innervation of tumors. Trudy Inst.norm.i
pat.fiziol. AMN SSSR 7:82-85 '54.   (MIRA 18:6)

1. Laboratoriya immuno-patologii serdechno-sosudistoy sistemy
(zav. - prof. D.F.Pletsityy) Instituta normal'noy i patologi-
cheskoy fiziologii AMN SSSR.

SKORODUMOVA, I.V.

Morphological changes in anaerobic infections in animals with
various types of the nervous system. Zhur. mikrobiol., epid.
i immun. 41 no.1:130-135 Ja '64.   (MIRA 18:2)

1. Institut normal'noy i patologicheskoy fiziologii AMN SSSR,
Moskva.

SKORODUMOVA, I.V.; BEREZHINSKAYA, V.V.

Structural changes in the enterochromaffin system of the small
intestine under the effect of rotundin. Biul.eksp.biol.i med.
58 no.7:113-115 Jl '64.   (MIRA 18:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut lekarstvennykh
i aromaticheskikh rasteniy (dir. P.T.Kondratenko) Ministerstva
zdravookhraneniya SSSR, Moskva. Submitted March 29, 1963.

137-58-6-11328

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 10 (USSR)

AUTHORS: Kislyakov, L.D., Epel'man, L.L., Sinel'shchikova, Ye.N.,
            Skorodumova, L.P.

TITLE: Results of Introduction of Selective Flotation of Copper-and-
            zinc Ores at the Krasnoural'sk Concentrating Mill (Rezul'taty
            osvoyeniya selektivnoy flotatsii medno-tsinkovykh rud na Kras-
            noural'skoy obogatitel'noy fabrike)

PERIODICAL: Byul. Tsentr. in-t inform. M-va tsvetn. metallurgii SSSR,
            1957, Nr 3, pp 13-20

ABSTRACT: Experiments were conducted with various procedures for the
             selective flotation (F) of Cu-Zn ores of the Sibayev deposit,
             under industrial and pilot-plant conditions. The procedure re-
             commended is one of direct selective F, first of Cu, with fine
             comminution of the concentrate of the primary flotation, fol-
             lowed by double fining thereof, and then of $Zn-FeS_2$ flotation
             with fine grinding of the combined concentrate with subsequent
             F of Zn therefrom, with four finings. FeS_2 concentrate is also
             separated from the tailings of the combined F. The Zn is de-
Card 1/2   pressed during the copper cycle by cyanide and $ZnSO_4$, while

137-58-6-11328

Results of Introduction (cont.)

$CuSO_4$ is used to activate the Zn during the zinc cycle. The collector is butyl xanthate. Hydrocyclones are used for control classification and thickening. Qualitative and equipment diagrams of the F process are presented, as well as tables of F procedures and performance criteria thereof.

L.B.

1. Copper ores--Flotation   2. Zinc ores--Flotation

Card 2/2

LANDO, Moisey Emmanuilovich; SKORODUMOVA, Nina Dmitriyevna;
    KVASOV, N.V., red.; ALABYSHEVA, N.A., red.izd-va;
    GVIRTS, V.L., tekhn. red.

[New developments in the promotion of technology in an
industrial enterprise] Novoe v tekhnicheskoi propagande
na promyshlennom predpriiatii. Leningrad, 1963. 27 p.
                                    (MIRA 17:4)

SKORODUMOVA, N.I., inzh.; BRODSKIY, V.S., tekhn.red.

[New methods for preparing and assembling clothing parts] Novye metody obrabotki i sborki detalei odezhdy. Moskva, Biuro tekhn. informatsii legkoi promyshl., 1959. 13 p.

(MIRA 13:11)

1. Russia (1923- U.S.S.R.) Gosudarstvennyy nauchno-tekhnicheskiy komitet. 2. Byuro tekhnicheskoy informatsii (for Skorodumova).
(Clothing industry)   (Gluing)

KRONGAUZ, N.N., red.; SKORODUMOVA, N.I., starshiy nauchnyy sotr.;
SHIMELIOVICH, Yu.B., red.; POTOPOVA, N.L., tekhn. red.

[Collection of reports of the Scientific Research Conference of
Workers of the Clothing Industry of the Ukrainian S.S.R.] Sbor-
nik dokladov Nauchno-tekhnicheskoi konferentsii rabotnikov
shveinoi promyshlennosti Ukrainskoi SSR, Kiev, 1959. Moskva,
TSentr.in-t nauchno-tekhn.informatsii legkoi promyshl., 1961. 18 p.
(MIRA 14:12)

1. Nauchno-tekhnicheskaya konferentsiya rabotnikov shveynoy pro-
myshlennosti Ukrainskoy SSR, Kiev, 1959.
(Ukraine--Clothing industry)

SKORODUMOVA, N. S.

6164. Treatment of endocarditis with antibiotics. N. I. Ismailov and N. S. Skorodumova. *Dokl. Akad. Nauk. Uzbek. S.S.R.,* 1955, No. 12, 49—52; *Referat, Zh. Biol.,* 1956, Abstr. No. 78423.—15 patients with septic endocarditis were treated with penicillin [I] in a daily dose of 200,000—500,000 units (dosage for course of treatment: up to 22 million units). The results included 7 fatal issues, 5 improvements (temp. (?) and e.s.r. decreased to normal, amount of N and erythrocytes increased), 3 shewed no improvement. Of the patients (43 with recidivism and 3 with acute rheumatoid endocarditis), 39 were treated with 200,000—600,000 units I daily (dosage for course of treatment 200,000 to 21 million units). 6 patients were treated with I and streptomycin [II]; the daily dose of I was 200,000—600,000 units (course of treatment up to 6½ million units), daily dose of II, 500,000 units (course of treatment up to 7 million units). The best results were given with a combined treatment with I and II and albomycin. Lethal results were not observed. Attention is drawn to the possibility of developing cardiac insufficiency on treatment with antibiotics. (Russian).

E. McKechnie

SHVARTSMAN, D.A.° SKORODUMCVA, V.A.; ZAVLINA, P.S.

Correct analysis of yarn breakage on spinning spindles. Tekst.
prom. 21 no.6:4-8 Je '61.   (MIRA 15:2)
                    (Spinning)

SKORODUMOVA, V. G.

THE EFFECT OF VARIATIONS IN THE POTENTIAL ON THE PERFORMANCE OF THE FEUSSNER SPARK GENERATOR. V. G. SKORODUMOVA (ZA VOD. LAB., 1946, 11, 351-352; C. Abs., 1946, 40, 6897)—(InRussian)—Changes in the potential have a considerable effect on the relative intensity of the spectral lines. For accurate analytical results, the potential of the generator should be kept const. within $\pm$ 5 V.

Theory of reinforcement of rubber: reaction of carbon black with sulfur and rubber. B. A. Dogadkin, B. Lukin, Z. Tarasova, Z. Skorodumova, and I. Tutorskii (Sci. Research Inst. Tire Ind., Moscow). *Kolloid. Zhur.* 18, 412-10(1956).—Channel black (I) heated with S (labeled with S^a) in toluene for 10 hrs. combined chemically with 0.04% and 0.28% S at 110° and 150°, resp.; the uptake of S was greater when an accelerator (a condensation product of AcH and PrCOH with PhNH2) was also present, and greatest when I was heated with H before heating with S. This hydrogenation lowered the O content of I from 4.4 to 2.1%. The aggregates of hydrogenated I were larger by about 20% than those of the original I. The percentage of Na butadiene rubber which ceased to be sol. in C_6H_6 after masticating with I was greater when I was hydrogenated. Vulcanizates of butadiene-styrene rubber contained a larger percentage of chemically bound S and had higher moduli of elasticity and breaking stress when they were loaded with hydrogenated I rather than regular I.   J. J. Bikerman

SKORODUMOVA, Z.

Theory of reinforcement of rubber; reaction of carbon black with sulfur and rubber. B. A. Dogadkin, B. Lukin, Z. Tarasova, Z. Z. Skorodumova, and I. Tutorskii. Colloid J. (U.S.S.R.) 13, 267-12(1955)(English translation).— See C.A. 51, 10955.　　　　B. M. B.

69-20-3-3/24

AUTHORS: Dogadkin, B.A.; Skorodumova, Z.V.; Kovaleva, N.V.

TITLE: On the Chemical Interaction of Sulfur and Carbon Black (O
             khimicheskom vzaimodeystvii sery s sazhey)

PERIODICAL: Kolloidnyy zhurnal, 1958, vol XX, Nr 3, pp 272-278 (USSR)

ABSTRACT: The chemical interaction of sulfur and black is of great
             importance in the vulcanization of rubber. The quantity of
             chemically bound sulfur, when heated with black in a hydro-
             carbon medium, is the greater the less the oxygen content
             in the black. The removal of oxygen from the surface of
             the black by means of hydrogenization, etc increases the
             chemical absorption of the sulfur on the surface of the
             black. Heating of the black at temperatures higher than
             $900^{\circ}C$ in a vacuum or hydrogen atmosphere leads to a decrease
             of the chemical absorption of sulfur on the surface of the
             black. This is due to the connection of the sulfur with the
             free valences of the end carbon atoms. An isotopic exchange
             of the bound sulfur with S^{35} is not possible. It is assumed
             therefore that the sulfur on the surface of the black forms
             resistant monosulfide groups. In view of these facts it is
Card 1/2   supposed that the sulfur joins the carbon black mainly at

On the Chemical Interaction of Sulfur and Carbon Black   69-20-5-3/24

the active sites of the carbon surface.
There are 5 tables, 7 graphs, and 7 references, 5 of which
are Soviet, 1 English, and 1 German.

ASSOCIATION: Nauchno·issledovatel'skiy institut shinnoy promyshlennosti,
Moskva (Scientific Research Institute of the Tire Industry,
Moscow)

SUBMITTED: February 20, 1958

Card 2/2   1. Carbon black—Chemical reactions   2. Sulfur—Applications

AUTHORS: Dogadkin, B. A., Skorodumova, Z. V., and Fel'dshteyn, M. S.

TITLE: Effect of the Chemical Nature of the Surface of Carbon Black on Its Interaction With Rubber and Sulfur, and on the Vulcanization Kinetics

PERIODICAL: Kolloidnyy zhurnal, 1960, Vol. 22, No. 6, pp. 663-670

TEXT: The purpose of the present paper was to study the interaction of carbon black with rubber and the dependence of this reaction on the nature of the carbon-black surface. The interaction in the systems rubber - carbon black and rubber - carbon black - sulfur was studied in butadiene-styrene rubber CKC-30A(SKS-30A). The vulcanization temperature was 143°C. The sorption of rubber from n-heptane solutions (Fig. 1) indicated that the commercial blacks drop in the following order according to the quantity of rubber sorbed per unit surface: Lampblack > thermal black > furnace black > channel black. The type "Feelblack O" corresponds to channel black. The rubber quantity sorbed per surface unit

Card 1/3

Effect of the Chemical Nature of the Surface   S/069/60/022/006/001/008
of Carbon Black on Its Interaction With Rubber   B013/B066
and Sulfur, and on the Vulcanization Kinetics

is the higher, the less oxygen-containing functional groups occur on the
black surface. The interaction of rubber with carbon black permitted the
establishment of a similar relationship at vulcanization temperature. It
was shown that the sulfur chemically bound on the black surface forms
additional active centers, and participates in the formation of cross
links. Since the opinions on the character of the interaction of carbon
black with rubber diverge, this problem requires further thorough
investigation. The effect of the oxidation of carbon black on the vulcaniza-
tion kinetics was tested on the type "Feelblack O" which is used to a
considerably extent in the tire industry. It was oxidized for 1.5 hours
at 400°C in the air. The oxygen content in the carbon black increased and
the low pH was indicative of an increased content of carboxyl and phenol
groups. It was found that the increased number of oxygen-containing
functional groups on the surface of carbon black reduce the vulcanization
rate, and the moduli, the content of bound sulfur, and increase the
maximum of swelling. This effect of oxygen-containing functional groups
was also confirmed by the data obtained for sulfur by heating the system
rubber - carbon black - sulfur with contents of lampblack, channel black,

Card 2/3

Effect of the Chemical Nature of the Surface
of Carbon Black on Its Interaction With Rubber
and Sulfur, and on the Vulcanization Kinetics

S/069/60/022/006/001/005
B013/B066

"Feelblack O", and furnace black (Fig. 6). Samples of channel black
which had been subjected to heat treatment were made available by
B. V. Lukin and K. A. Pechkovskaya. There are 6 figures, 4 tables, and
12 references: 8 Soviet, 7 US, 1 British, and 2 Australian.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.
Moskva (Scientific Research Institute of the Tire Industry,
Moscow)

SUBMITTED: June 6. 1960

Card 3/3

S/069/61/023/006/002/005
B119/B101

AUTHORS: Dogadkin, B. A., Fel'dshteyn, M. S., Skorodumova, Z. V.

TITLE: Effect of carbon black on the vulcanization kinetics and the character of the sulfur structure of the vulcanizates

PERIODICAL: Kolloidnyy zhurnal, v. 23, no. 6, 1961, 679 - 683

TEXT: Standard type vulcanizates from CKC-30A (SKS-30A) butadiene styrene rubber without filler, and those filled with 50 parts by weight of channel black, furnace black, lamp black, or carbon black of the type fill-black "O", were investigated for their content of bound or replaceable (polysulfide) sulfur. The vulcanizates were also investigated for their capability of swelling. The content of replaceable sulfur was determined by means of radioactive sulfur according Z. N. Tarasova, M. Ya. Kaplunov, M. A. Vas'kovskaya, B. A. Dogadkin (Sb "Vulkanizatsiya rezinovykh izdeliy" (Vulcanization of rubber products), Yaroslavskiy sovnarkhoz, 1960). The effect of the chemical structure of the carbon-black surface on the type of sulfur bond was determined by comparing the effect of untreated channel black (composition: 93.04% C, 1.25% H, 5.71% O, pH 3.47) with that of thermally treated one (at 500°C and

Card 1/3

225 kg/cm^2 in hydrogen medium; composition: 94.65% C, 1.39% H, 3.96% O,
pH 7.2). The possible effect of accelerators (N-cyclohexyl-2-benzo-
thiazole sulfenamide, 2-mercapto benzothiazole, diphenyl guanidine) on
the sulfur bond in the presence of the carbon-black types mentioned was
investigated with vulcanizates from CKC-3AM (SKS-3AM) butadiene styrene
rubber. Results: The content of polysulfide bonds decreases in the
order: unfilled vulcanizate (~0.6% after 100 min vulcanization), lamp
black, fill-black "O", furnace black, channel black (~0.2% after 100 min
vulcanization). Cross linking is strongest in vulcanizates containing
fill-black "O", weakest in those without filler. With decreasing content
of oxygen-containing groups on the carbon black surface, the rate of
cross linking and the content of bound sulfur increase, while the
capability of swelling decreases. The rate of vulcanization and the degree
of cross linking (capability of swelling after 100 min vulcanization:
without filler: ~400% related to the initial volume of rubber; filled:
~280 - 310%) are higher for vulcanizates with filler than for those
without. The effect of fillers is not affected by the accelerator.
Vulcanizates with channel black contain least polysulfide sulfur, but
are cross-linked in a high degree (low capability of swelling). The

Card 2/3

SKORODUMOVA, Z.V.; FEL'DSHTEYN, M.S.

Molecular sieves and their use in the production of rubber goods.
Kauch. i rez. 22 no.9:41-46 S '63.   (MIRA 16:11)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.

L   41265-66   EWT(m)/EWP(j)   IJP(c)   JWD/RM
ACC NR: AP6022445   (A)   SOURCE CODE: UR/0069/66/028/002/0214/0217

30
B

AUTHOR: Dogadkin, B. A.; Skorodumova, Z. V.; Fel'dshteyn, M. S.

ORG: Scientific-Research Institute of the Tire Industry, Moscow (Nauchno-issledovatel'skiy institut shinnoy promyshlennosti)

TITLE: The influence of carbon black on the interaction of rubber with sulphur and accelerators

SOURCE: Kolloidnyy zhurnal, v. 28, no. 2, 1966, 214-217

TOPIC TAGS: butadiene styrene rubber, dehydrogenation, vulcanization, carbon black

ABSTRACT: Two series of experiments were carried out to define the influence of alkaline carbon blacks in accelerating the attachment of sulphur and improving its maximal combined content, improving the modulus, and lowering peak value of swelling. The first concerned effects of channel black and Philback 0 on dehydrogenation in the butadiene styrene rubber system SKS-30A (100 parts by weight) plus 7 parts di-2benzthiazyldisulfide plus 50 parts carbon black. The second series utilized the same system with an addition of 3 parts sulphur. Dehydrogenation and interaction of rubber and sulphur are both activated by the presence of Philback 0. Channel black promotes attachment of accelerator radicals to molecular chains

Card   1/2   UDC: 541.182:546.22

ACC NR: AP6022445

of the rubber, but suppresses the other named reactions. Experimental results served to clarify modifications of vulcanization kinetics induced by the presence of various types of carbon black. Orig. art. has: 6 figures.

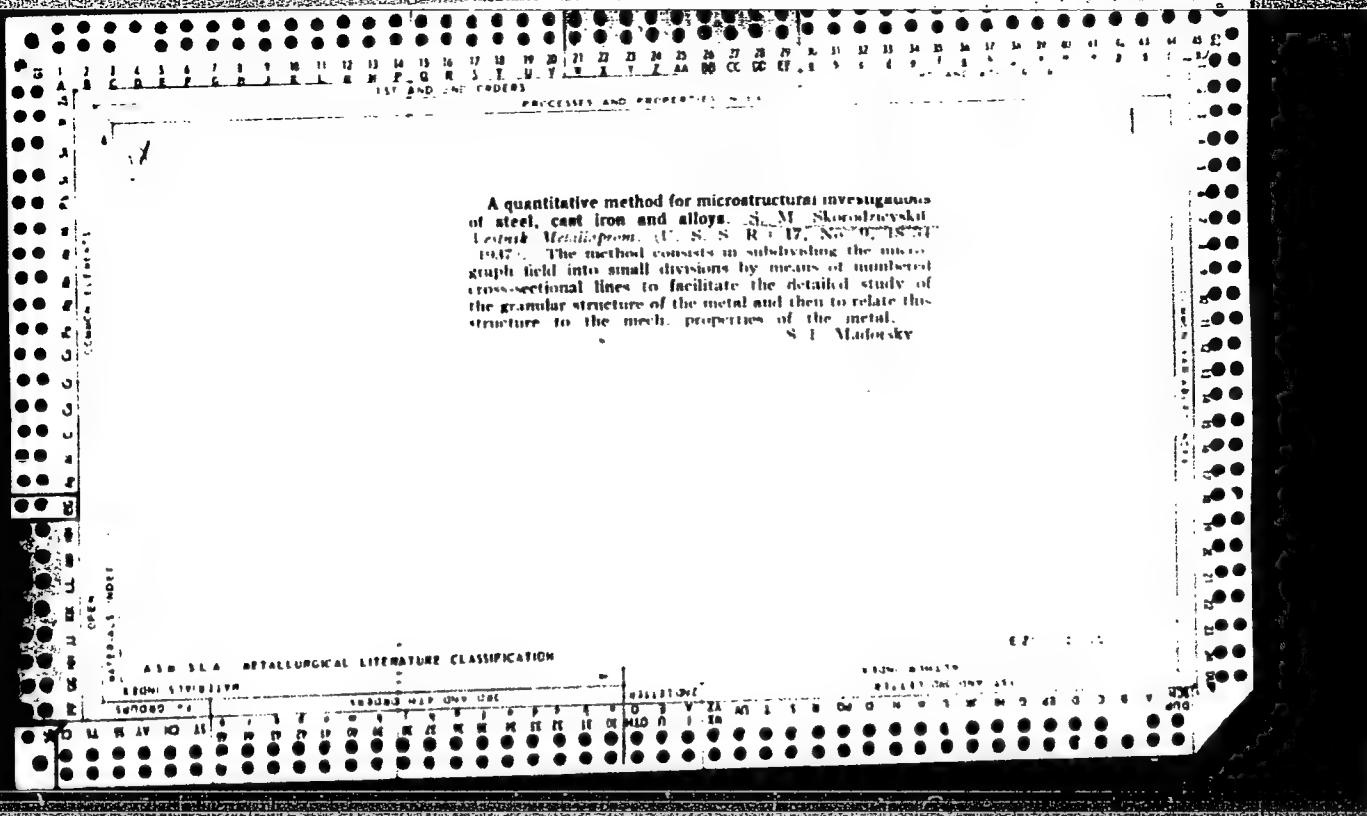SUB CODE: 07,11/ SUBM DATE: 03May65/ ORIG REF: 007

Card 2/2

some interrelations in rail steels. S. M. Skoralziev-akil. *Metallurg.* 9, No. 7, 97-100 (1941). S. discusses the relation between mech. properties, such as tensile strength and elongation and C and Mn contents.
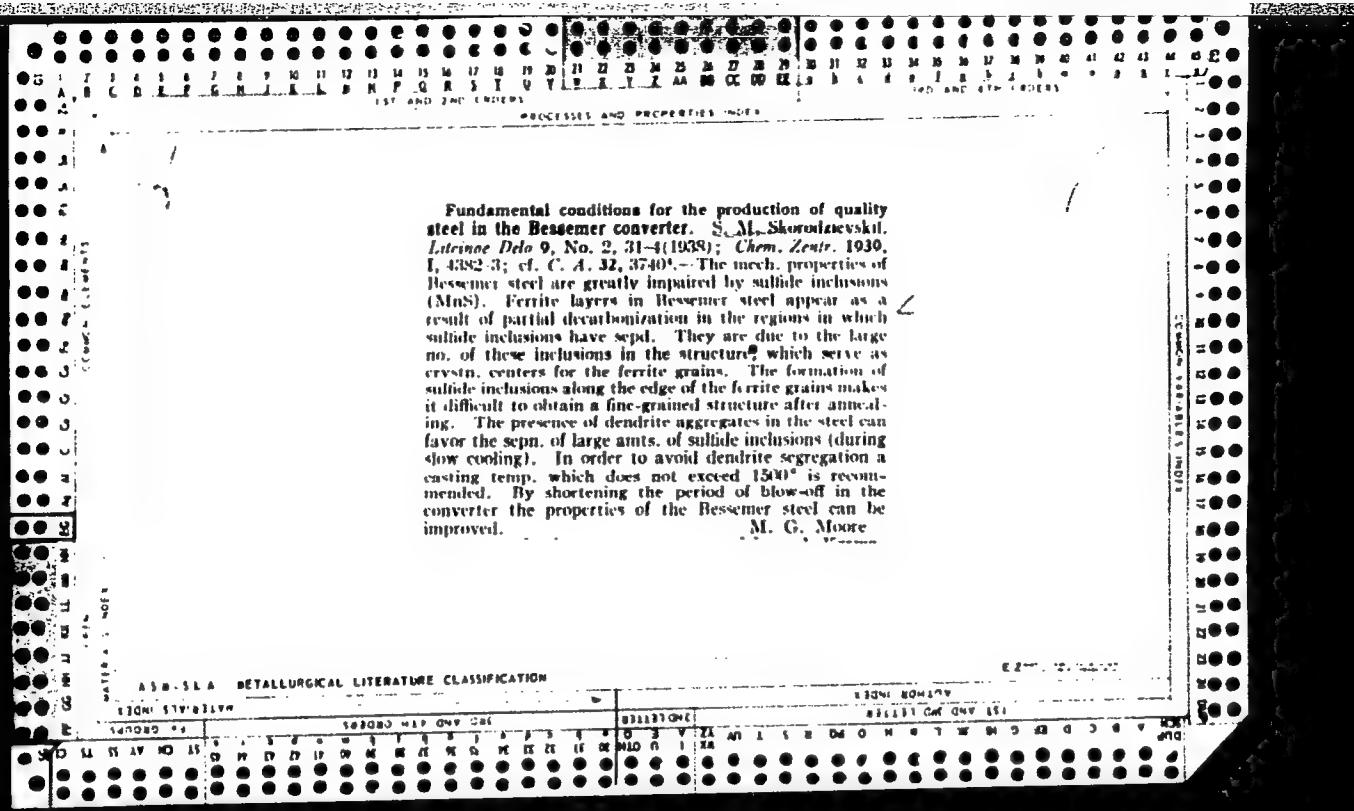
H. W. Rathmann

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES
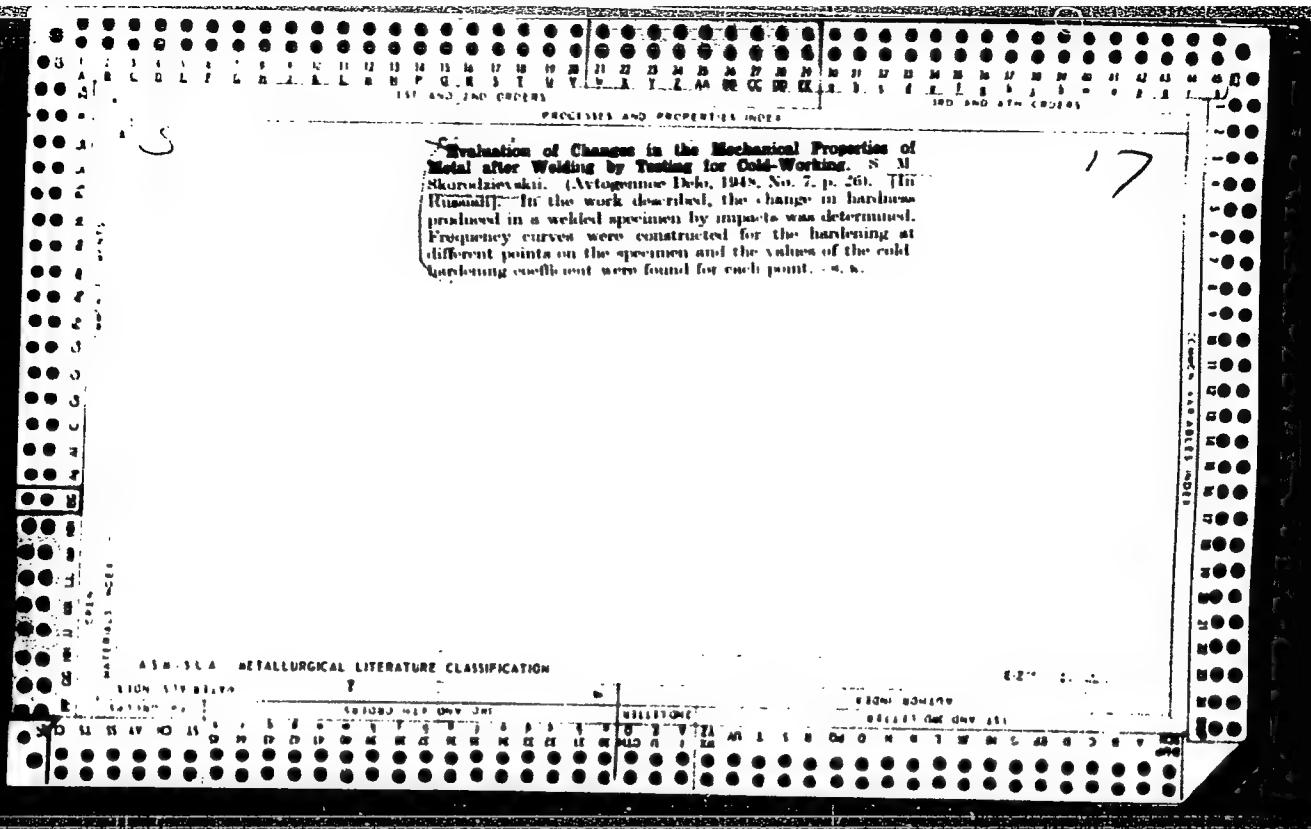
A quantitative method for microstructural investigations of steel, cast iron and alloys. S. M. Skorobzevskii. *Legkii Metallprom.* (U. S. S. R.) 17, No. 10, 18-21 1947. The method consists in subdividing the micrograph field into small divisions by means of numbered cross-sectional lines to facilitate the detailed study of the granular structure of the metal and then to relate this structure to the mech. properties of the metal.

S. J. Madorsky

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION

Fundamental conditions for the production of quality steel in the Bessemer converter. S. M. Skorodzievskii. *Latrinoe Delo* 9, No. 2, 31–4(1938); *Chem. Zentr.* 1930. I, 4382–3; cf. *C. A.* 32, 3740[4].— The mech. properties of Bessemer steel are greatly impaired by sulfide inclusions (MnS). Ferrite layers in Bessemer steel appear as a result of partial decarbonization in the regions in which sulfide inclusions have sepd. They are due to the large no. of these inclusions in the structure, which serve as crystn. centers for the ferrite grains. The formation of sulfide inclusions along the edge of the ferrite grains makes it difficult to obtain a fine-grained structure after annealing. The presence of dendrite aggregates in the steel can favor the sepn. of large amts. of sulfide inclusions (during slow cooling). In order to avoid dendrite segregation a casting temp. which does not exceed 1500° is recommended. By shortening the period of blow-off in the converter the properties of the Bessemer steel can be improved.   M. G. Moore

Statistical Analysis of the Quality of Tubes and Welded Joints in Gas Pipelines. S. M. Skorodzievskii. (Avtogennoe Delo, 1948, No. 4, pp. 23-24). [In Russian]. The results are presented of a statistical analysis of a large number of test results on arc and gas pressure-welded tubes of Russian and foreign manufacture. These show that, compared with arc-welded joints, gas pressure-welded joints tend to have higher yield strength but poorer bending properties. — s. s.
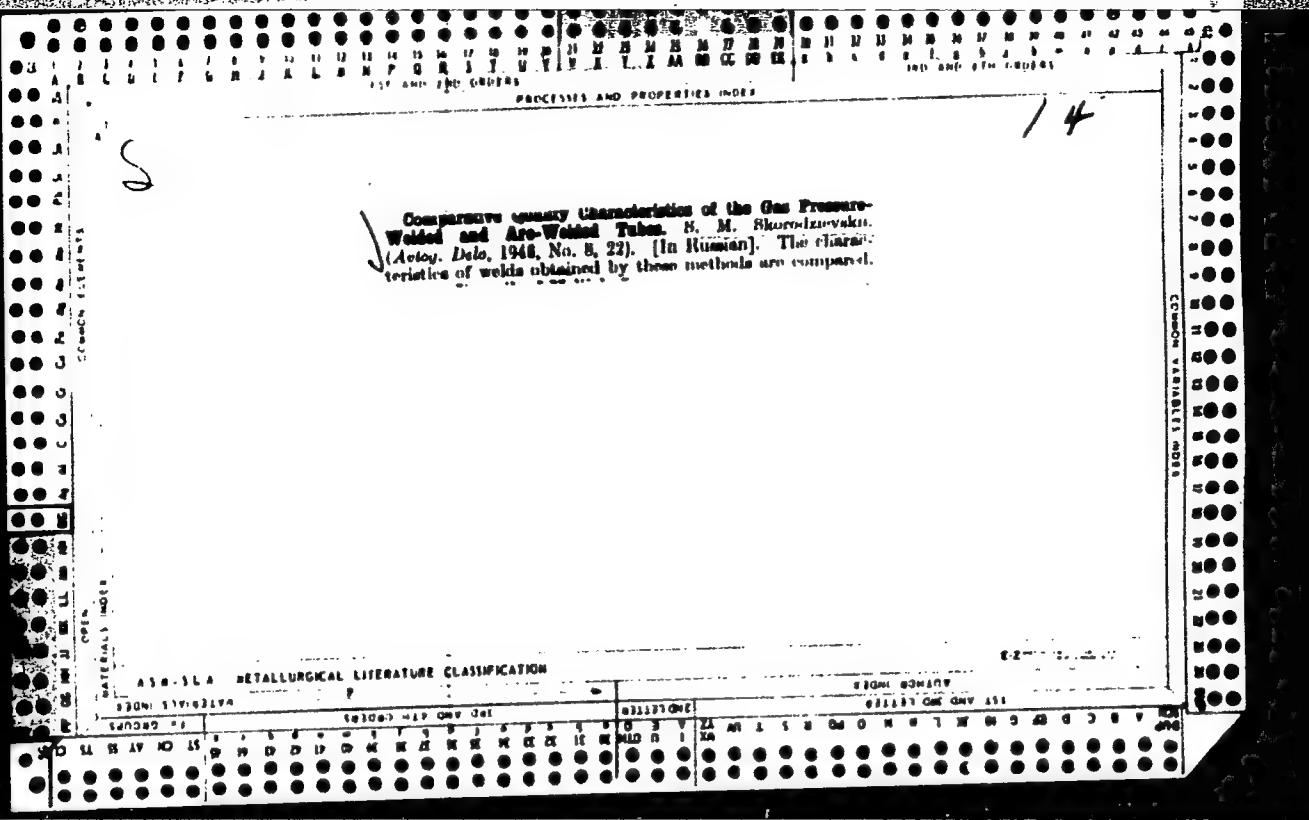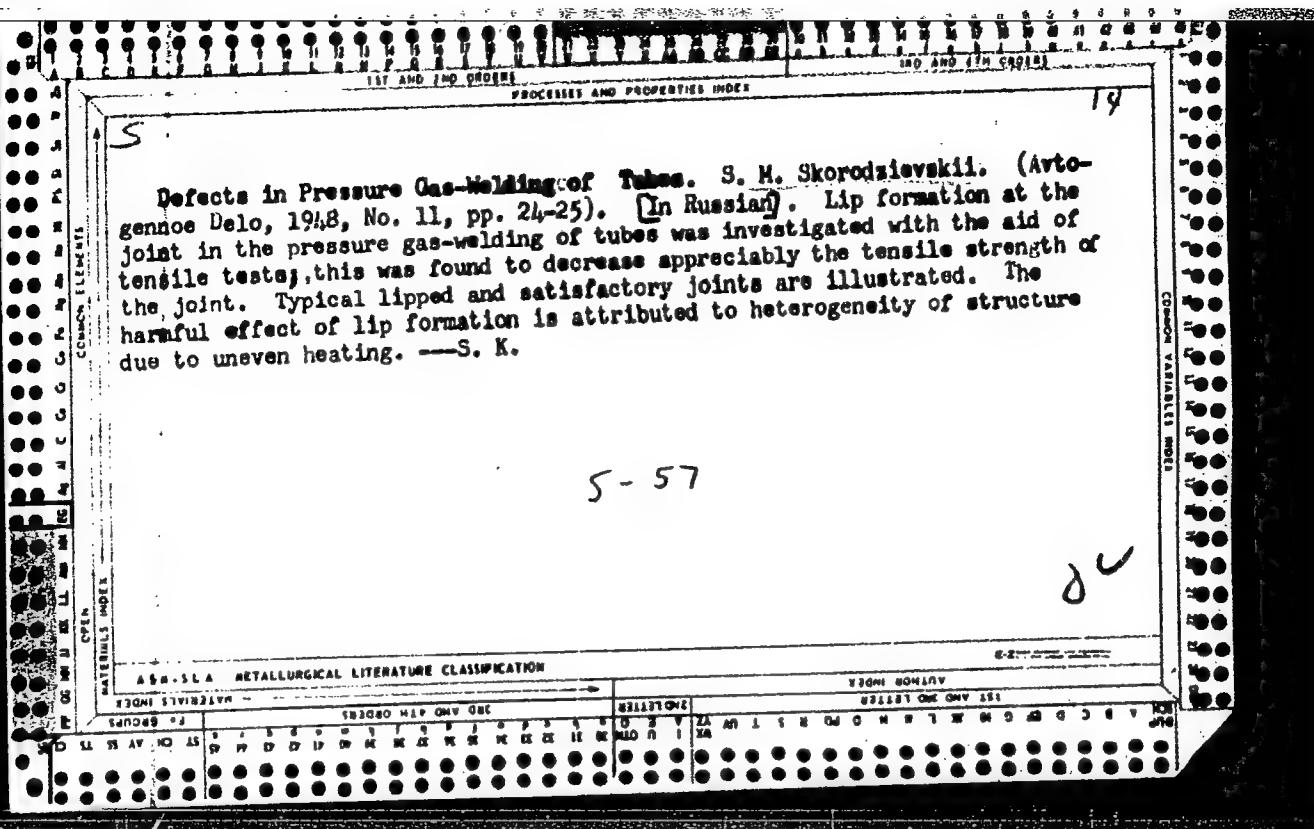
PROCESSES AND PROPERTIES INDEX

Evaluation of Changes in the Mechanical Properties of Metal after Welding by Testing for Cold-Working. S. M. Skorodzievskii. (Avtogennoe Delo, 1948, No. 7, p. 26). [In Russian]. In the work described, the change in hardness produced in a welded specimen by impacts was determined. Frequency curves were constructed for the hardening at different points on the specimen and the values of the cold hardening coefficient were found for each point. - s. s.

A S M - S L A METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

Comparative summary characteristics of the Gas Pressure-Welded and Arc-Welded Tubes. S. M. Skorodzievsku. (Avtog. Delo, 1948, No. 8, 22). [In Russian]. The characteristics of welds obtained by these methods are compared.

METALLURGICAL LITERATURE CLASSIFICATION

Defects in Pressure Gas-Welding of Tubes. S. M. Skorodzievskii. (Avtogennoe Delo, 1948, No. 11, pp. 24-25). [In Russian]. Lip formation at the joint in the pressure gas-welding of tubes was investigated with the aid of tensile tests; this was found to decrease appreciably the tensile strength of the joint. Typical lipped and satisfactory joints are illustrated. The harmful effect of lip formation is attributed to heterogeneity of structure due to uneven heating. —S. K.

5 - 57

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

Welding and Flame-Cutting

S

Control of Welded Tubes by Gamma-Ray Irradiation. —S. M. Skoropisovskii. (*Svtog. Delo,* 1949, No. 7, 27). [In Russian] Two methods of using gamma-rays for testing the quality of welds in pipelines are described, as well as a device assisting the interpretation of the figures obtained. A nomogram for estimating exposures is given. —s. k.

SKORODZIYEVSKIY, S. M.

USSR/Engineering - Welding, Testing   Oct 51

"Bending Test in Gas Pressure Welding," S. M. Skorodziyevskiy, Engr

"Avtogen Delo" No 10, pp 22, 23

Questions expediency of bending test for pipe-lines welded by gas-pressure method. Editors do not agree entirely with author's reasoning and suggest open discussion on methods for production tests of welded joints and, particularly, on permissible limits for applicability of bend testing.

202T43

SKORODZIYEVSKIY, S. M.

Founding

Practice of application of statistical method of control in the founding industry.
Lit. proizv. 2 No. 8, 1952.

PA 233T64

SKORODZIYEVSKIY, S. M.

USSR/Metallurgy - Cast Iron, Castings,   Jul 52
                    Defects

"Centrifugal Casting of the Cylinder Liners for Trac-
tor Engines," S.M. Skorodziyevskiy, Engr

"Litey Proizvod" No 7, pp 30, 31

Investigates causes for slag nodules, resulting in
gas cavities revealed in upper part of liners after
machining. Establishes that one of basic factors
affecting formation of slag inclusions is pouring
temp, which, when raised above 1,300°, reduces the
number of reject castings. Discusses also effect of
centrifugal forces on nonuniformity of cast-iron chem
compn.

233T64

ASM

483-K.   Influence of Gas Pressure
Welding on the Quality of Welds. (In
Russian.) S. M. Skorodzievskii. *Avto-
gennoe Delo*, v. 23, Jan. 1952, p. 24-26.
    Bend tests were made on speci-
mens taken from the top, bottom,
and sides of butt-welded steel tubes.
Data are charted and illustrated.
(K2, Q5, ST)

SKORODZIEVSKIY, S. M.

Quality Control

Practice of using the statistical method of analysis and control in the thermal shop. Avt. trakt. prom. No. 2, 1953.

SKORODZIYEVSKIY, S.M.

Producing vessels by liquid stamping. Lit.proizv. no.9:25-26
D'54.   (MLRA 8:2)
(Forging machinery)

28-6-11/40

AUTHOR: Skorodziyevskiy, S.M., Engineer

TITLE: Utilization of Machine-counting Stations for Statistical
            Analysis (Ispol'zovaniye mashinno-schetnykh stantsiy dlya
            statisticheskogo analiza)

PERIODICAL: Standartizatsiya, 1957, # 6, pp 40 - 42 (USSR)

ABSTRACT: General information is given on work methods of industrial
            "machine-counting stations", and several practical examples
            proving their usefulness are cited.
                The statistical method of data processing has been intro-
            duced at the Novo-Kramatorskiy Plant imeni Stalin for production
            of supporting rollers of rolling mills. The statistical card
            used for this registration is shown. One worker processes
            up to 3,000 punched cards per shift.
                Under-surface cracks located across the axis in forgings,
            for a long time caused rejects of many large rollers before
            the new statistical analysis method was introduced. The data
            for this analysis were taken from the workshop documents for
            274 rollers rolled from 47-tons to 103-tons castings at the
            plant "Zaporozhstal'" during 1952-1956. The analysis revealed
Card 1/2   a direct dependence of the cracks on the carbon content in

steel. The steel grade was then changed and rejects because of cracks were reduced to 0.5%. The analysis of effect of the forging technology on the quality of supporting rollers revealed that long heating of steel 9ХФ in a temperature range of 1220-1250°C results in an abrupt decrease of plastic properties at the metal temperature below 950°C, and that 1220°C is the optimum temperature for the oven and 1220°C the optimum for the metal. The "Zaporozhstal'" data demonstrated that too deep re-grinding of rollers had caused (during 1952-1956) a loss equal to 2 million rubles.

The Kiyev plant "Bol'shevik" has been practising the statistical analysis method for two years.

The corrosion resistance of cast iron " СЧШ-А " was investigated in this way and it was found that silicon content has a great effect on this property. The former silicon content of 2-2.4% was reduced to 1.6 - 1.8%, which increased the corrosion resistance of this cast iron by 30%.

There are 2 diagrams.

AVAILABLE: Library of Congress

Card 2/2   1. Industry-USSR   2. Rolling mills-Statistical analysis

MYLKO, S.N., kand.tekhn.nauk; SKORODZIYEVSKIY, S.M., inzh.

Semicontinuous pouring of cast iron pipe and cylindrical ingots.
Met. i gornorud. prom. no.2:39-41 Mr-Ap '62.   (MIRA 15:11)
(Continuous casting) (Pipe, Cast iron)

SKORODZIYEVSKIY, S. M., inzh.

Active automatic control equipment. Mashinostroenie no.5:
74-80 S-O '62.   (MIRA 16:1)

1. Proyektno-konstruktorskiy tekhnologicheskiy institut
Kiyevskogo soveta narodnogo khozyaystva.

(Automatic control—Equipment and supplies)

AUTHOR: Skorodziyevskiy, S.M.

TITLE: Statistical investigation of shrinkage of molded rubber articles

PERIODICAL: Kauchuk i rezina, no. 2, 1963, 28 - 31

TEXT: Statistical methods for determining the shrinkage of molded rubber articles are considered the only means to get accurate results. The investigation using these methods considers shape and dimensions of the articles, location of grooves in the press form, rubber composition and physico-mechanical properties. Temperature shrinkage is given preference in the general factors determining the shrinkage. It is calculated from the coefficient of volumetric and linear rubber expansion. The coefficient of linear expansion is calculated from: $\beta_p = x \beta_k$ (1), where β_k is the coefficient of linear expansion of natural rubber (NR); x - relative volumetric quantity of NR, sulfur and other ingredients of the rubber mix of an organic nature. Temperature shrinkage is calculated from: $C = (\alpha - \beta) \Delta T \cdot 100$ (2), where β is the coefficient of linear expansion of the rubber, α - the coefficient of linear expansion of

Card 1/2

Statistical investigation of shrinkage of ....

metal, ΔT - temperature drop. The complete shrinkage was calculated from

$$C = \frac{A_{article} - A_{press}}{A_{press}} \cdot 100\% , \qquad (3)$$

where $A_{article}$ is the dimension under control of the rubber article at room temperature; A_{press} - the size of the groove of the press form at room temperature. The latter two values are estimated as the arithmetic mean from several distributions of size values of the grooves of press-form and articles. The effect of ring size on the shrinkage of compression rings was studied and the relation of the shrinkage to the internal and external ring diameter established. A determination of the relation between ring shrinkage and that of the cross-section diameter and the internal and external diameters revealed the presence of a probable relation between the shrinkage change and the dimension ratio: $d_{cross-section}/N_{int.}$ and $d_{cross-section}/N_{ext.}$. Experiments at the НИИРП (NIIRP) further revealed that the groove distribution in the press form affects the extent of the article shrinkage. There are 7 figures and 4 tables.

ASSOCIATION: Proyektno-konstruktorsko-tekhnologicheskiy institut, g. Kiyev (Institute of Design and Construction Technology, Kiyev).

Card 2/2

SKORODZIYEVSKIY, S.M., inzh.

Device for active control and regulation of operating conditions
of galvanic cells. Mashinostroenie no.3:74-76 My-Je '63.
(MIRA 16:7)

1. Proyektno-konstruktorskiy tekhnologicheskiy institut
Kiyevskogo soveta narodnogo khozyaystva.
(Electroplating)
(Electronic control)

SKOROGOREN *KC*, M.G.

Intratesticular method of immunization. Zhur. mikrobiol.,
epid. i immun. 40 no.3:79-82 Mr '63.   (MIRA 17:2)

1. Iz Odesskogo instituta epidemiologii i mikrobiologii
imeni Mechnikova.

RADKEVICH, I. YU., KUIIKOV, V. V., FUTTNTIVA, V. I., SKOROKHATOVA, K. I.

Foxes - Diseases

Treating gastrointestinal diseases of young foxes and minks. Kar. i zver. 5 no. 4, 1952.

9. MONTHLY LIST OF RUSSIAN ACCESSIONS, Library of Congress, December 1952. Uncl.

③

Kontyučenko, A., and Skorohod, A.   On a theorem of N. K. Bari.   Uspehi Matem. Nauk (N.S.) 8, no. 5(57), 165–166 (1953).   (Russian)

N. Bari showed that if $\{\varphi_n\}$ and $\{\psi_n\}$ are orthonormal systems in Hilbert space, and if $\sum |\varphi_n - \psi_n|^2 < \infty$, then both systems are complete if one is. The authors reprove this theorem in a neat and straightforward manner. The result is applied to the proof that the orthonormal solutions of certain Sturm-Liouville systems are complete.

B. Gelbaum (Minneapolis, Minn.).

Skorokhod, A. V.

USSR/Mathematics - Distribution laws

Card 1/1   Pub. 22 - 9/47

Authors   : Skorokhod, A. V.

Title   : Asymptotic formulas for rigid distribution laws

Periodical   : Dok. AN SSSR 98/5, 731-734, Oct 11, 1954

Abstract   : Asymptotic formulas, for rigid distribution laws, are presented in the form
               of a thesis. The characteristic function which determines the canonical law
               into which any rigid distribution law governing the transformation of an in-
               dependent variable can be reduced is described. The practical application
               of such asymptotic formulas is explained. Six references: 3-USSR; 2-USA
               and 1-German (1941-1954). Table.

Institution : The M. V. Lomonosov State University, Moscow

Presented by: Academician A. N. Kolmogorov, July 1, 1954

SKOROKHOD, A.V., student V kursa.

Markov processes in normal spaces. Stud.nauk.pratsi no.16:151-157
'55.   (MLRA 10:2)
        (Chains (Mathematics))

SKOROKHOD, A.V., student V kursa.

Analytic properties of stable distributions of probabilities. Stud.
nauk.pratsi no.16:159-164 '55.   (MLRA 10:2)
             (Probabilities)

SKOROKHOD, A.V.

Limit transition from a sequence of sums of independent random
variables to a uniform stochastic process with independent in-
crements. Dokl. AN SSSR 104 no.3:364-367 S '55.   (MLRA 9:2)

1.Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova.
Predstavleno akademikom A.N.Kolmogorovym.
                    (Probabilities)

SKOROKHOD. A.V

Name	:	SKOROKHOD, A. V.
Dissertation	:	Limit theorems for random processes
Degree	:	Cand Phys-Math Sci
Defended At	:	Moscow State U imeni M. V. Lomonosov, Mechanicomathematical Faculty
Publication Date, Place	:	1956, Moscow
Source	:	Knizhnaya Letopis' No 6, 1957

Skorohod, A. V.   Limit theorems for stochastic processes.

1-F\W

2

Teor. Veroyatnost. i Primenen. 1 (1956) 289-319
(Russian. English summary)

Let X be a complete separable metric space, with distance function ρ, and let K be the space of functions from $[0, 1]$ to X, with one-sided limits at all points, continuous to the right in $[0, 1]$, continuous to the left at 1

and ..... with such that ..... and $x_n(t) \to t$, both uniformly. Throughout the following f is a function on K to the real line, continuous in the J_1 topology. N is any subset of $[0, 1]$ which is denumerable, dense in the interval, and contains the points 0, 1, $\{\xi_n(t), 0 \leq t \leq 1\}$ is a stochastic process almost all of whose sample functions are in K. It is shown that the distribution of $f[\xi_n(\cdot)]$ goes to that of $f[\xi_0(\cdot)]$ when $n \to \infty$, for all f, if and only if there is convergence of the finite dimensional distributions of the $\xi_n(t)$ process to those of the $\xi_0(t)$ process, for t restricted to N, and if for every $\varepsilon > 0$

$$\lim_{\sigma \to 0} \lim_{n \to \infty} \sup P\{\Delta(\sigma, \xi_n(t)) > \varepsilon\} = 0.$$

1/2

Skorohod, A. V.

where

$\Delta(c, \xi_n(t)) =$

$$\sup_{t-c<t_1<t<t_1<t+c} \min(\rho[\xi_n(t_1), \xi_n(t)]; \rho[\xi_n(t), \xi_n(t_2)]).$$

If the conditions are satisfied, f need only be supposed continuous almost everywhere ($\xi_0(t)$ process measure) on K. Corresponding results are obtained for the other topologies. In the paper reviewed above Prohorov obtains analogous results by metrizing the sample function spaces and the spaces of measures. As an interesting tool, the author proves the following theorem. Suppose that the finite dimensional distributions of the $\xi_n(t)$ process converge to those of the $\xi_0(t)$ process. It is proved that there is then a sequence of stochastic processes $\{x_n, 0 \le t \le 1\}$, defined on the measure space consisting of $[0, 1]$ with Lebesgue measure, such that the finite dimensional distributions of the $x_n(t)$ and $\xi_n(t)$ processes are the same for each n, that the sample functions of the $x_n(t)$ process are almost all in K, and that $x_n(t) \to x_0(t)$ with probability 1 for t in N. J. L. Doob (Geneva).

I-FW

2

SKOROKHOD, A.V.

Skorohod, A. V. On a class of limit theorems for Markoff chains. Dokl. Akad. Nauk SSSR (N.S.) 106 (1956), 781–784. (Russian)

For each n, let $0 = \xi_{n0}, \cdots, \xi_{nn}$ be random variables forming a Markov process with stationary transition probabilities, and define $\xi_n(t) = \xi_{n[t(n+1)]}$, for $0 \le t < 1$, where $[\alpha]$ is the integral part of α. Let $\{\xi(t), 0 \le t \le 1\}$ be a Markov process with stationary transition probabilities. It is stated that if, when $n \to \infty$, the $\xi_n(t)$ process transition probabilities go to the $\xi(t)$ process transition probabilities in a carefully stated sense, then the distribution of a functional defined on the $\xi_n(t)$ process sample functions converges to that of the functional on the $\xi(t)$ process

sample functions. The $\xi(t)$ process is of mixed diffusion discrete type. The functional F is defined, and continuous almost everywhere, on the space of right-continuous functions on [0, 1] with left-hand limits existing at all points, the space being provided with an appropriate topology and with the measure induced by the $\xi(t)$ process probabilities.   J. L. Doob (Geneva).

SKOROKHOD, A.V. (Moskva).

Limit theorems for stochastic processes with independent increments
[with summary in English]. Teor. veroiat. i ee prim. 2 no.2:145-177
'57.   (MIRA 10:11)

(Limit theorems (Probability theory))

AUTHOR: Skorokhod, A. V.   (Kiyev)

TITLE: On the Differentiability of Measures which Correspond to Stochastic Processes. 1. Processes with Independent Increments. (O differentsiruyemosti mer, sootvetstvu-yushchikh sluchaynym protsessam. 1. Protsessy s nezavisimymi prirashcheniyami.)

ABSTRACT: If on a Borel body $\mathcal{B}$ of sets from some space X two measures μ_1 and μ_2 are given, then it is said that the measure μ_2 is absolutely continuous with respect to the measure μ_1 if for every set $A \in \mathcal{B}$ for which $\mu_1(A) = 0$, $\mu_2(A) = 0$. The well-known Radon-Nikodim theorem (see Ref.1) asserts that for every measure μ_2 which is absolutely continuous with respect to the measure μ_1 there exists a measurable function $p(x)$ over $\mathcal{B}$ such that

$$\mu_2(A) = \int_A p(x)\mu_1(dx). \qquad \text{(Eq.1)}$$

Card 1/4

On the Differentiability of Measures which Correspond to Stochastic Processes. 1.

If for the measure μ_2 Eq.1 is true, then it is further said that the measure μ_2 is differentiable with respect to the measure μ_1 and we write

$$p(x) = \frac{d\mu_2}{d\mu_1}(x), \qquad\qquad (Eq.2)$$

and the function $p(x)$ is called the derivative of the measure μ_2 with respect to the measure μ_1, or the density of the measure μ_2 with respect to the measure μ_1. To each random process $\xi(t)$ there corresponds by Kolmogorov's theorem (Ref.2) a measure defined on a minimal Borel body γ of all cylindrical sets of the space of all functions. This paper is devoted to the investigation of the conditions under which for two given processes $\xi_1(t)$ and $\xi_2(t)$ the measure $\mu_{\xi_2(t)}$ is

Card 2/4

SOV/52-2-4-2/7

On the Differentiability of Measures which Correspond to Stochastic Processes. 1.

absolutely continuous with respect to $\mu_{\xi_1(t)}$, and the

density of the measure $\mu_{\xi_2(t)}$ with respect to $\mu_{\xi_1(t)}$

is calculated.   Detailed investigation for certain particular cases is contained in Ref.3.   A unique general result, previously known to the author, is that the measure corresponding to the diffusion process with diffusion coefficient equal to unity and the transport coefficient $\gamma(x, t)$ with certain assumptions about the smoothness of $\gamma(x, t)$ is absolutely continuous with respect to the measure corresponding to the Weiner process. Proof of this can be found in Ref.4.   The present paper consists of two parts.   In the first part the necessary and sufficient conditions are found for the absolute

Card 3/4   continuity of $\mu_{\xi_2(t)}$ with respect to $\mu_{\xi_1(t)}$,   and

SOV/52-2-4-2/7

On the Differentiability of Measures which Correspond to Stochastic Processes. 1.

$$\frac{d\mu_{\xi_2(t)}}{d\mu_{\xi_1(t)}}$$

is calculated for the case when $\xi_1(t)$ and $\xi_2(t)$ are continuous stochastic processes with independent increments. In the second part, to be published, these same questions will be considered for Markov processes. The author considers processes defined for $t \in [0, 1]$ and taking values from an m-dimensional Euclidian space $R^{(m)}$.   There are 6 Soviet references.

SUBMITTED: April 14, 1957.

Card 4/4   1. Topology   2. Mathematics

22591

S/044/60/000/010/015/021
C111/C333

/6.6100

AUTHOR: Skorokhod, A.V.

TITLE: Some remarks on random measures

PERIODICAL: Referativnyy zhurnal, Matematika, no. 10, 1960, 131,
             abstract 11878.(Visnyk Kyivs'k.un-tu, 1958, No.1, Ser.
             astron.,matem.ta mexnan.,vyp.I, 105-114)

TEXT: Let X be a certain set and S-- σ-algebra of subsets from
X. On X there is given a random measure (r.m.)μ, if for every $A \in S$
the random variable $\mu(A)$ is defined so that for an arbitrary sequence

of pairwise disjoint sets $A_k \in S$ the series $\sum_{k=1}^{\infty} \mu(A_k)$ converges to

$\mu(\bigcup_{k=1}^{\infty} A_k)$ in probability. If X is a metric space and if the measure
of an arbitrary one-point set is equal to zero, then the r.m. μ is
called regular. The r.m. μ is called normal, if the joint distribution
of $\mu(A_1)$, $\mu(A_2)$,..., $\mu(A_k)$ is normal for arbitrary $A_1, A_2, ..., A_k$.

Every normal measure is completely determined by presupposition of two
set functions $m(A)=M\mu(A)$ and $\sigma^2(A)=M\mu^2(A)$. The r.m. μ is called
Markovian, if for an arbitrary monotonely increasing sequence of sets
Card 1/3

Some remarks on random measures

C_i the variables $\mu(C_i)$ form a Markov chain. The author considers examples of Markov measures which are of interest in mathematical statistics. It is proved: To every regular normal Markov measure with M, $\mu(A)=0$ on S there exists a numerical measure $\lambda(A)$ and constants a and b such that $\sigma^2(A)=a\lambda(A)+b\lambda^2(A)$. Relative to Markov measures which attain integer nonnegative values, the following generalization of the Poisson law is proved: if there exists a numerical measure $m(A)$ such that $m(X)=1$ and

$$\lim_{m(A)\to\infty} P\left\{\mu(A) = 1\right\}/m(A) = 1$$

$$\lim_{m(A)\to 0} P\left\{\mu(A) > 1\right\}/m(A) = 0,$$

then there exists a function $\varphi(z)$ continuous for $|z|\leqslant 1$ and analytic for $|z|<1$ such that for arbitrary pairwise disjoint sets $A_1, A_2, \ldots, A_r$ it holds:

$$P\left\{\mu(A_1)=k_1, \mu(A_2)=k_2, \ldots, \mu(A_r)=k_r\right\} =$$

Card 2/3

Some remarks on random measures

22591
S/044/60/000/010/015/021
C111/C333

$$= \frac{m^{k_1}(A_1)}{k_1!} \frac{m^{k_2}(A_2)}{k_2!} \cdots \frac{m^{k_r}(A_r)}{k_r!} \varphi^{(k_1+k_2+\ldots+k_r)}\left(1 - m\left(\bigcup_{i=1}^{r} A_i\right)\right),$$

where $\varphi^{(k)}(z)$ is the k-th derivative of $\varphi(z)$. Finally the author gives some unsolved problems in the theory of the Markov r.m. (description of the class of all Markov measures, description of all Markov processes which are distribution functions of a Markov measure on the real line; asymptotic theorems for Markov measures etc.).

[Abstracter's note: Complete translation.]

Card 3/3

AUTHOR: Skorokhod, A. V.

TITLE: Limit Theorem for Markov Processes (Predel'nyye teoremy dlya protsessov Markova)

ABSTRACT: General theorems can be applied to obtain the results for Markov processes (Refs.1 to 8). In this work a case of Markov processes with no secondary discontinuity is considered. It is shown that the convergence of initial distributions and infinitesimal operators of processes is entailed with the convergence of the J_1-distribution (J_1 - continuous functionals).

The following assumptions are necessary: 1) If X represents a space with $\mathfrak{S}$ as a σ-algebra of X, and T is a set of numbers on a straight line, then the function $P(t, x, \tau, A)$, defined for all $x \in X$, $t < \tau$; $t, \tau \in T$, $A \in \mathfrak{S}$ is called a transition Markov function (Eq.1.1). 2) A process $\xi(t)$ defined for $t \in T$ will be - Markov process if the probability function (1.2) can be defined for $t_1 < t_2 < \ldots < t_k$. It is said that $P(t, x, \tau, A)$ is a transition Markov function of the process $\xi(t)$.

Card 1/9   3) The Markov process is a regular stochastic process (i.e.

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condition PP) if the Markov transition function: $P(t,x,\tau,A)$ satisfies the conditions (1.6), (1.7), (1.8) for $\varepsilon > 0$.
4) The Markov process is a continuous stochastic process (i.e. condition PH) if its transition function $P(t,x,\tau,A)$ satisfies the Eq.(1.5) for $\varepsilon > 0$. 5) A sequence $\xi_1, \xi_2 \cdots \xi_k$ will form a Markov chain if the function $P_i(x,A)$, $i = 1, \ldots$ k-1 will be defined as the function (1.9).
6) If $\xi_1, \cdots, \xi_m$ represents the Markov chain and $P_{k,m}$ $(x,V_\varepsilon(x)) \leqslant \alpha < 1 (k < m)$ for all $x \in X$, then the Eq.(1.10) is a Borell multitude of y at a distance ε or less from A.
7) If the process $\xi(t)$ satisfies the condition PP and Eq.(1.11), then the Eq.(1.12) is true for all $\varepsilon > 0$.
8) If the process $\xi(t)$ satisfies the condition PP, the Eq.(1.13) will be true for such $\bar{c}$ that:

$$\Delta_{J_1}^P (\bar{c}, \xi(t), \tfrac{\varepsilon}{5}) < \tfrac{1}{3} \qquad .$$

9) If $\xi_1, \xi_2, \cdots, \xi_m$ represents a Markov chain, and :

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$$\alpha = \sup_{\substack{x \in X \\ k=1,2,..,m-1}} P_k(x, V_{\frac{\varepsilon}{12}}(X)); \quad \beta = \sup_{1 \le i < j \le k < l \le m} \min\left[\sup_{x \in X} P_{i,j}\right.$$

$$\left(x, V_{\frac{\varepsilon}{12}}(X)\right); \quad \sup_{x \in X} P_{k,l}\left(x, V_{\frac{\varepsilon}{12}}(x)\right)\right] \quad ; \quad \text{then for} \quad \beta < \tfrac{1}{4}$$

the Eq.(1.14) will be satisfied for $\alpha \le \tfrac{1}{4}$.

10) If the process $\xi(t)$ satisfies the condition PP and that

$$\Delta^P_{J_1}\left(\bar{c}, \xi(t), \tfrac{\varepsilon}{20}\right) \le \tfrac{1}{3} \quad , \quad \Delta^P_{J_1}\left(c(\delta), \xi(t), \tfrac{\varepsilon}{12}\right) = \delta \le \tfrac{1}{4}$$

for $\bar{c}$ and $c(\delta)$ respectively, and

$$\Delta^P_{J_1}\left(\tfrac{c}{l}, \xi(t), \tfrac{\varepsilon}{12}\right) \le \tfrac{1}{4} \quad \text{for the integer} \quad l \quad , \quad \text{then the}$$

probability function (1.15) will be true for $t_1 < t_2 < \ldots < t_n$.

Card 3/9 It was shown that some selected functions of a process with

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probability 1 have no secondary discontinuity (Refs.16,17). This can be applied also in the case of the processes satisfying the condition PP . It can be stated that if a Markov process satisfies the condition PP then such a process $\xi'(t)$ exists which belongs to K_X with the probability 1 (Theorem 2.3). Therefore, if a transition Markov function $P(t,x,\tau,A)$ belongs to K_X with the probability $P(t,X,b,V_{\varepsilon/2}$ $(x)) \leq t < b$. If it is possible to define the conditions for the distribution $f(\xi_n(t))$ to converge with the distribution $f(\xi_0(t))$ for any J_1 . These conditions can be expressed as follows: if the processes $\xi_n(t)$, n = 0, 1, 2, ... satisfy PP , and their distributions converge with the process $\xi_0(t)$ so that the limit (3.1) takes place for all $\varepsilon > 0$, then the probability of the distributions $f(\xi_n(t))$ and $f(\xi_0(t))$ to

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converge is small (Theorem 3.1). The same can be stated in the case of the process $\xi_n(t)$ satisfying the condition PP and the process $\xi_o(t)$ satisfying the condition PH (Theorem 3.2), as it is possible to apply the conception of 1/2-group in order to formulate the limiting theorems for the Markov process. (The set of limited operators U_t ; $t > 0$, represents a 1/2-group for $U_{t+\tau} = U_\tau U_t$). Thus, if the sequence of the continuous 1/2-groups is U_t ; n = 0, 1, so that $\|U_t^{(n)}\| \leqslant 1$, and if $I_\varphi^{(n)}$ for all $\varphi \in D_{I^{(n)}}$ converge at $I_\varphi^{(o)}$, ($I^{(n)}$ - infinitesimal operator of the 1/2-group $U_t^{(n)}$) then $U_t^{(n)}$ f for every $f \in B$ strongly converge to $U_t^{(o)}$ f (Theorem 4.6). Also, if $U_k^{(n)}$, n = 1, 2, ... - sequence of the discrete 1/2-groups ($\|U_k^{(n)}\| \leqslant 1$ - continuous 1/2-group) and if $I_n^{(n)}\varphi$ for every $\varphi \in D_{I^{(o)}}$ weakly converges with $I_\varphi^{(o)}$; ($I_n^{(n)}\varphi(x) = n(U_1^{(n)} - E)\varphi(x)$) then

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$U_k^{(n)} f \rightarrow U_t^{(o)} f$ where $n \rightarrow \infty$, $k/n \rightarrow t$ (Theorem 4.7). The inconvenience of defining the whole infinitesimal operation can be avoided if $I_n^{(n)} \varphi \rightarrow I_\varphi^{(o)}$ is considered only for $\varphi \in K$ where K - a sub set of $D_{I(\cdot)}$. To establish the probability of transition in the Markov process distribution, two cases are considered where the sequence of the homogeneous with time Markov process $\xi_n(t)$ will be conditioned by the Markov transition function $P_n(t, x, A)$ and the 1/2-group $U_t^{(n)} f(x)$ with $\tilde{I}^{(n)}$ - weak infinitesimal operation or by the Markov chain $\xi_{n,o}, \xi_{n,i} \cdots \xi_{n,n}$ when the probability of transition of k-steps in n-chain is $P_n^k(x, A)$. Then the condition (5.1) can be applied. Therefore, it can be stated that the distribution of the process $\xi_n(t)$ weakly converges with the distribution

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of the process $\xi_0(t)$, i.e. :

$$\lim_{n\to\infty} P\left\{\xi_n(0) \in A_0, \; \xi(t_1) \in A_1, \ldots, \xi_n(t_k) \in A_k\right\} = P\left\{\xi_c(0)\right.$$

$$\left. \in A_0, \xi_0(t_1) \in A_1, \ldots, \xi_0(t_k) \in A_k\right\} \quad \text{for all}$$

k, $t_0 = 0 < t_1 < \ldots < t_k$ (Theorem 5.5). Also, if

$\xi_{n,o}$, $\xi_{n,1} \ldots, \xi_{n,n}$; $n = 1, 2, \ldots$ - represents the Markov

chain with the transition probability $P_n(x, A)$ and the
expression $\int P_n(x, dy)\varphi(y)$ is continuous, then the distribut-
ion of the processes $\xi_n(t)$ converges with the process $\xi_c(t)$
(Theorem 5.7). The case when the convergence of the
infinitesimal operators is everywhere uniform must be con-
sidered separately. Thus, if $\int P_n(x, dy)f(y)$ is continuous
on x for the continuous function:

$f(x)$, $n\int P_n(x, dy)(\varphi(y) - \varphi(x)) \to I_\varphi^0$ (where I^0 - infinitesimal

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operator of the process $\xi_0(t)$) and the distribution of $\xi_0^{(n)}$ is weakly converging with the distribution $\xi_0(0)$, then the distribution of the process $\xi_n(t)$, defined by the equation $\xi_n(t) = \xi_k^{(n)}$ for $\frac{k-1}{n} \leqslant t < \frac{k}{n}$, converges with the distribution of the process $\xi_0(t)$ (Theorem 6.3). It is possible to represent the strong infinitesimal operators by the weak ones, $\widetilde{I}^{(n)}$. In this case the infinitesimal operator could be suitably determined if the value :

$$\frac{\int P(t, x, dy)\varphi(y) - \varphi(x)}{t}$$ is limited by t and x, while:

$$\frac{1}{t}\left[\int P(t, x, dy)\varphi(y) - \varphi(x)\right] \to \psi(x)$$. This can be expressed

in terms of the transition probability when Eqs.(6.3), (6.4).

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(6.5) can be satisfied and $\lim\sup_{r>\infty} n PP_n(x, V_r(x)) = 0$.

Then, the Eq.(6.6) will be true for every $T>0$ (Theorem 6.5).
The convergence of J_1 can be defined in a similar manner.
It can be shown that under certain conditions for every J_1 ,
the distribution $F(\xi_n(t))$ weakly converges with the dis-
tribution $F(\xi_c(t))$, or if the process $\xi_n(t)$ is described
by the relation $\xi_n(t) = \xi_k^{(n)}$, $t_k^{(n)} \leqslant t \leqslant t_{k+1}^{(n)}$, then the
distribution $F(\xi_n(t))$ will converge with the distribution
$F(\xi(t))$. There are 19 Soviet references and 1 French.
SUBMITTED: March 3, 1958.

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SKOROKHOD, A.V.

"On Stochastic Differential Equations."

[Kiev State University imeni T.G.Shevchenko]

report to be presented 5 July 1960 at the 4th Symposium on Mathematics Statistics and Probability - Berkeley, California, 20 Jun- 30 Jul 1960.

GNEDENKO, B.V.; KOROLYUK, V.S.; and SKOROKHOD, A.V.

"On Asymptotic Distributions in the Theory of Probability."

[Kiev State University imeni T.G.Shevchenko]

report to be presented 27 June 1960 at the 4th Symposium on Mathematics Statistics and Probability - Berkeley, California, 20 Jun- 30 Jul 1960.

SKOROKHOD, A.V.

PHASE I BOOK EXPLOITATION   SOV/4981

Soveshchaniye po teorii veroyatnostey i matematicheskoy statistike, Yerevan, 1958

Trudy Vsesoyuznogo soveshchaniya po teorii veroyatnostey i matematicheskoy statistike, Yerevan, 19-25 sentyabrya 1958 g. (All-Union Conference on the Theory of Probability and Mathematical Statistics. Held in Yerevan 19-25 September, 1958. Transactions) Yerevan, Izd-vo AN ASSR, 1960. 291 p. Errata slip inserted. 2,500 copies printed.

Sponsoring Agency: Akademiya nauk Armyanskoy SSR.

Editorial Staff: O.A. Arbutyunyan, B.V. Gnedenko, Ye.B. Dynkin, Yu.V. Linnik and S. Kh. Tumanyan; Ed. of Publishing House: A.G. Slikmi; Tech. Ed.: M.A. Kaplanyan.

PURPOSE: The book is intended for mathematicians.

COVERAGE: The book contains 41 articles submitted to the Conference and dealing with the theory of probability and mathematical statistics. Some of the articles are the papers read at the Conference and edited for publication, while others outline the theses of papers which appeared or are scheduled to appear, wholly or in part, in other publications; in some cases, such publications are quoted. ... of the papers whose contents were published elsewhere is included and the places of publication are indicated. Individual articles examine theories of discuss the theorems of Shannon, Markov's chains, and certain processes, quantities, and functions. Such items as the method of least squares, the stochastic ... service, spectral instruments, number, games, and certain processes, the stochastic Markov's and distribution process, measures and their application, a scheme of Bernoulli experiments, Markov-type random field, visible distribution of stars, Brownian motion, capacity of radio channels, and defective products are considered. No personalities are mentioned. References accompany some of the articles.

Stepanov, V.V. On a Property of Accompanying Laws. (Theses) 33

Klass, B.M. Limit Theorems for Random Quantities on Compact Abelian Groups. (Theses) 35

Petrov, V.V. On a Central Limit Theorem for m-Dependent Quantities 38

Statulyavichus, V.A. Limit Theorems for Heterogeneous Markov's Chains (Theses) ....

Yaroshevskiy, N.S. Modern State of the Theory of Games and Cooperative Games. (Theses) 43

Vorob'yev, ... and Yu.I. Problems. Some Problems in the Theory of Position Games. (Theses) 51

Nagayev, S.V. Limit Theorems for Large Deviations in the Theory of Homogeneous Markov's Chains 52

Richter, Wolfgang. Local Limit Theorems for Probabilities of Large Deviations. Necessity of Cramer's Condition 55

Pyraimen, B.S. On Constructive Proof of the Basic Shannon's Theorem for a Simple Binary Case. (Theses) 66

Shurgin, Yu.I. Some Properties of Stochastic Pulse Processes 72

Skorokhod, A.V. Random Measures and their Applications in the Theory of Stochastic Processes and Statistics. (Theses) 79

Chentsov, N.N. Topologic Measures and the Theory of Random Functions 83

Slobodenyuk, N.P. On Evaluation of a Distribution Function Based on the Realization of a Stationary Process 88

Vilkas, E.I. On One Problem of a Random Walk. (Theses) 96

SKOROKHOD, A. V. (Kiyev)

Differentiability of measures corresponding to random process.
Part 2: Markov processes. Teor. veroiat. i ee prim. 5 no.1:45-53
'60.   (MIRA 13:10)

(Chains (Mathematics))

SKOROKHOD, A. V.

USSR/Mathematics - Stochastics

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Author   : Skorokhod, A. V.

Title   : A theorem relative to stable distributions

Periodical : Usp. mat. nauk, 9, No 2(60), 189-190

Abstract   : Briefly investigates the analytic nature of stable distribution functions for values of the characteristic index alpha less than 1. The case for alpha greater than or equal to 1 was treated by A. I. Lapin, for the results of which see B. V. Gnedenko and A. N. Kolmogorov, Predel'nyye raspredeleniya dlya summ nezavisimykh sluchaynykh velichin [Limit distributions for sums of independent random quantities], State Technical Press, 1949. Acknowledges the guidance of Professor B. V. Gnedenko, who posed the problem for the author.

Submitted   : March 6, 1954

AUTHOR: Skorokhod, A. V.

TITLE: A Limit Theorem for Independent Random Variables

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol.133, No.1, pp.34-35

TEXT: Let ξ_1, ξ_2, ..., ξ_n, ... be independent equally distributed random variables for which it is $M \xi_i = 0$, $D \xi_i = 1$. Let

$$S_{no} = 0, \quad S_{nk} = \frac{1}{\sqrt{n}} \sum_{i=1}^{K} \xi_i$$

Let the functions $g_1(t)$ and $g_2(t)$ be defined on $[0,1]$, where it is $g_1(0) < 0 < g_2(0)$, $g_1(t) < g_2(t)$ for all $t \in [0, 1]$. Moreover let $|g_1(t_1) - g_1(t_2)| + |g_2(t_1) - g_2(t_2)| \leq K |t_1 - t_2|$ for all $t_1, t_2 \in [0, 1]$ and a certain $K = $ const. Let Q_n be the probability

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C 111/ C 333

A Limit Theorem for Independent Random Variables

$$Q_n = P \left\{ g_1\left(\frac{k}{n}\right) < S_{nk} < g_2\left(\frac{k}{n}\right) , \ k = 0,1,2,\ldots,n \right\}.$$

Let the Brown motion $w(t)$ be considered for which it is $Mw(t) = 0$, $Dw(t) = t$. Let denote

$$Q = P \left\{ g_1(t) < w(t) < g_2(t), \quad 0 \leqq t \leqq 1 \right\} .$$

For bounded ξ_i, i. e. for the case that

$$(\ast) \quad P \left\{ |\xi_i| > c \right\} = 0,$$

the author proves:
Theorem: There exists a constant H only depending on K, C, $g_1(0)$ and $g_2(0)$ such that for all n it holds:

$$(1) \qquad |Q - Q_n| \leqq H \ \frac{\log n}{\sqrt{n}} \quad .$$

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C 111/ C 333

A Limit Theorem for Independent Random Variables

Yu. V. Prokhorov is mentioned in the paper.

There are 2 Soviet references.

PRESENTED: April 16, 1960, by A. N. Kolmogorov, Academician.

SUBMITTED: April 12, 1960

Card 3/3

SKOROKHOD, A.V.

On a problem in the statistics of Gaussian processes.   Dop.AN URSR
no.9:1167-1170 '60.   (MIRA 13:10)

1. Kiyevskiy gosudarstvennyy universitet. Predstavleno akademikom
AN USSR B.V. Gnedenko.
       (Mathematical statistics)

SKOROKHOD, Anatoliy Vladimirovich; GIKHMAN, I.I., doktor fiz.-
mat. nauk, prof., otv. red.; MIRONETS, Ye.V., red.;
KHOKHANOVSKAYA, T.I., tekhn. red.

[Studies on the theory of random processes; stochastic dif-
ferential equations and limit theorems for Markov processes]
Issledovaniia po teorii sluchainykh protsessov; stokhasticheskie
differentsial'nye uravneniia i predel'nye teoremy dlia protses-
sov Markova. Kiev, Izd-vo Kievskogo univ., 1961.   215 p.
                                                    (MIRA 15:6)

        (Limit theorems (Probability theory))
    (Differential equations)   (Markov processes)